

Claims:

1. A method for the contactless ignition of a welding arc, in which high-frequency ignition pulses are applied between the welding electrode and the workpiece to be worked to ionize the gap between the welding electrode and the workpiece, and in which the welding current is connected after the ignition of the welding arc, characterized in that several pulse packets (44) with presettable frequencies and, in particular, packet period durations (47), or time periods, are applied, wherein several successive ignition pulses (45) are emitted in a pulse packet (44) and a packet interval (46) is each executed between said pulse packets (44).

2. An ignition method according to claim 1, characterized in that the ignition pulses (45) emitted in a pulse packet (44) are changed in respect to their number and/or frequency and, in particular, ignition period duration (50).

3. An ignition method according to claim 1 or 2, characterized in that the ratio of the packet period duration (47) to the duration of the ignition pulses (45), i.e. the ignition period duration (50), is high.

4. An ignition method according to one or several of the preceding claims, characterized in that the ignition pulses (45) within a pulse packet (44) are applied at an ignition period duration (50) of between 25 μ s and 1 ms, preferably 125 μ s.

5. An ignition method according to one or several of the preceding claims, characterized in that the pulse packets (44) are applied at a packet period duration (47) of between 1 ms and 1 s, preferably 100 ms.

6. An ignition method according to one or several of the preceding claims, characterized in that the welding current is applied for a defined time period following the first ignition pulse (45).

7. An ignition method according to any one of claims 1 to 6,

characterized in that the time period (48) of the pulse packets (44) and the number of ignition pulses (45) per pulse packet (44), respectively, are adjusted or generated as a function of the adjusted welding parameters such as, e.g., the material of the workpiece (16) to be worked, the material of the welding electrode (27), a protective gas (8) employed, etc.

8. A circuit for the contactless ignition of a welding arc, including a charge circuit (31), at least one pulse capacitor (30), at least one discharge circuit containing a switch, and a high-voltage transformer (32) for coupling to the welding electrode (27) the high-frequency ignition pulses discharged from the pulse capacitor (30) via the switch, characterized in that a pulse compression circuit (40) connected with the charge circuit (31) is provided, comprising the pulse capacitor (30), the high-voltage transformer (32) and the switch, said switch being formed by a magnetic inductor (41) so as to ensure the high-frequency switching of the ignition pulses.

9. An ignition circuit according to claim 8, characterized in that the pulse compression circuit (40) is comprised of two or several consecutively arranged stages, each stage containing at least one pulse capacitor (30), a switch formed by a magnetic inductor (41) and a high-voltage transformer (32).

10. An ignition circuit according to any one of claims 8 to 9, characterized in that a device (4, 38) for controlling the ignition pulses, which is connected with the charge circuit (31), is provided.

11. An ignition circuit according to claim 10, characterized in that the control device (4, 38) is connected with a current source (2) to control the instant of the connection of the welding current upon completion of the ignition.